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**Certificate in**  
**e-Commerce**  
**under SCVT Craftsman Training Scheme**

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**Certificate in e-Commerce  
under SCVT Craftsman Training Scheme**

Eligibility : 12th pass under 10+2 system or duly recognized Diploma in Engineering from any AICTE approved Polytechnic Diploma of 3yrs duration after class 10th.

Fees : 25,000/-

Age : As per Department's normal ITI Admission norms

Duration of Training : 52 Weeks (1 year) @ 30 hrs/week.  
- 2 hrs/week for Library  
- 2 hrs/week for Week End Exam  
- 2 hrs/week for Extra Curricular Activity  
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Total : 6 hrs/week  
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**30 - 6 = 24 hrs/week total course hours.**

Total Practical hrs/week : 12 hrs

Total Theory hrs/week : 12 hrs

Total Course duration : 52 x 24 hrs = 1248 hrs

Total no. of hours for Practical : 52 x 12 hrs = 624 hrs

Total no. of hours for Theory : 52 x 12 hrs = 624 hrs

Total Students per Batch : 25

**Objectives of the Course :**

- 1) Learning Fundamental of Computer.
- 2) Learning basics of E-Commerce management.
- 3) A student can learn various operating systems.
- 4) Learning Database administration & modeling tools like UML.
- 5) To attain optimum skill level for Web page designing.
- 6) Learning various software packages and operating systems like Windows NT, Linux, HTML, DHTML, Oracle 8.0, Flash 4.0 Java 2.0, ASP & JSP etc.
- 7) A student can successfully do Project work.

**Minimum Hardware and Furniture required for e-Commerce trade under the aegis of SCVT pattern**

<b>Sr. No.</b>	<b>Hardware and Furniture Specification</b>	<b>Quantity Reqd. for 4 Batches</b>
1	Server with P- III or P- IV Processor @ 500 MHz with 128 MB RAM, 10.2 GB HDD, 1.44 MB FDD, 16 Bit Ethernet Card, 52x CD ROM Drive, SVGA Color monitor, 101 Keyboard, Mouse, Sound Card and Speakers + Microphone Separate Telephone line for Internet connection with 56.6 Kbps Modem Web Camera and Mpeg Encoder	1
2	Nodes with P-III Processors @ 500 MHz. with 64 MB RAM, 10.2 GB HDD, 1.44 MB FDD, 16 Bit Ethernet Card, SVGA Color monitor, 101 Keyboard, Mouse	25
3	5 KVA stabilizer	2
4	0.5 KVA UPS for Server	1
5	16 Port Hub for LAN RJ 45 connectors and UTP cable	2 Hubs ( Cable and Connectors as per requirement )
6	132 Column Dot Matrix Printer	1
7	Deskjet or Laser or Inkjet Printer	1
8	Scanner Flat Bed	1
9	Window A.C. with 1.5 and 2 ton capacity	2 ( one of 1.5 Ton / one of 2 Ton )
10	Vacuum Cleaner	1
11	Computer tables with sunmica top, having sliding tray for keyboard and one shelf for storage	25
12	Student Chairs with Castor and Adjustable Height Having Cushion	25
13	Cushion fix chairs with rest arm and movable writing pad support	25
14	White Board	2
15	Over Head Projector (OHP) or any other Multi-media type display device	1

**Note : Each Batch Comprising of 25 Students.**

**Software required for e-Commerce trade under the aegis of SCVT pattern**

Software Specification
Windows NT (Server ) , Windows NT (Workstation ) , DOS , Java 2.0, JDK 1.3, Oracle 8.0, ASP, Internet Connection, Linux 7.0, FrontPage 2000, Flash 4.0, Web Server (Web Logic ) IIS 3.0 or later (Windows NT) or Peer Web Services 3.0 or later (NT Workstation). ACP (if using Peer Web Services PWS 3.0), Personal Web Server 4.0 <b>All Softwares should be license version</b>

**Faculty Qualification** :Diploma in Computer Science/Computer Application/Computer Technology (2 years OR more) by any Institution approved by AICTE. OR BCA (3 year course) or MCA or BE (Computer Science) from any recognized university.

In addition to above, the faculty should have minimum 3 years of teaching experience in any reputed Computer Institute in respect of topics covered in the course.

**Faculty Requirement** :**FOR ONE BATCH** Minimum 2 faculties are needed with above qualification for 1 batches each of 25 students. (1 Faculty for theory and 1 faculties as a lab coordinator )  
**FOR TWO BATCHS** Minimum 3 faculties are needed with above qualification for 2 batches each of 25 students. (1Faculty for theory and 2 faculties as a lab coordinator )

**Note : Theory and practical should be conducted simultaneously for each batch of 25 students**

**Area Requirement** : For Practical Lab : 300 Sq. ft.  
For Theory Room : 200 Sq. ft.  
For Library Room : 150 Sq. ft.

Office Space, Pantry etc. should be there. Separate Toilet Facility for ladies and gents should be there.

**Total Area requirement for Institute is 1200 Sq. Ft. minimum in good locality.**

**Reference Books** : ABCs of Windows 98, Computer Basics, LINUX Complete, Java 2 Complete, VBScript, JavaScript, Pure JSP, ASP in 21 days,

**Exam Pattern** : 1Hour Theory (100 marks) & 2 hours Practical (300 marks). Mid-term exam should be conducted after six months. Final examination should be conducted at the end of the course.

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## e-Commerce Main Topics & Duration

<b>Sr. No</b>	<b>Topics</b>	<b>Course duration in weeks</b>	<b>Total Theory hrs.</b>	<b>Total Practical hrs.</b>
1	Computer Fundamentals & DOS	2	24	24
2	Windows NT 4.0	2	24	24
3	Linux	2	24	24
4	MS-FrontPage 2000	2	24	24
5	HTML, DHTML	2	24	24
6	Macromedia Flash 4.0	2	24	24
7	CGI/PERL	3	36	36
8	Oracle 8 DBA	8	96	96
9	VB Script, Java Script	4	48	48
10	Java 2.0	8	96	96
11	ASP, JSP	2	24	24
12	e-Commerce (Management)	2	24	24
13	Web Server (Web Logic)	1	12	12
14	UML (Introduction)	2	24	24
15	XML (Introduction)	2	24	24
16	Cutting Edge Technology	4	48	48
17	Project (Simulated)	4	48	48
	<b>TOTAL</b>	<b>52 weeks</b>	<b>624 hrs.</b>	<b>624 hrs.</b>

## **E-Commerce Week wise Break-up**

### **Computer Fundamentals & DOS**

#### **Week - 1**

Introduction

Booting process

What is Computer?

History of Computer

- A Tribute To The Past
- Generations Of Computer

Types Of Computers

- Micro Computer
- Mini Computer
- Main Frames
- Super Computer

Applications of Computers

Advantages of Computers

Computers and Human Beings

Basic Computer Organization

- Input Devices
- Memory
- Processor
- Output Devices

Units of Memory

Types of Memory

Storage Devices

- Tapes
- Disks

Difference Between Data and Information

Need of Information

Types of Programming Languages

- High Level Languages
- Low Level Languages

Data Organization

What are Data Files

What are Program Files

What are Batch Files

What are Command Files

The Numbering Systems

Decimal System

Binary System

Binary Coded System  
What are ASCII Text Files  
Role of ROM-BIOS in a Computer System  
Software  
Different Types of Software

- System Software
- Application Software
- Custom Software

Interpreters  
Compilers  
Assemblers  
Editors  
Hardware  
Types of Computer Hardware  
Latest in Computer Hardware

## DOS

### **Week - 2**

Concepts of an Operating System

- DOS Buffers

Types of Operating Systems

- Single User
- Multi User

Functions of an Operating System

- Device Management
- Memory Management
- Disk Organization

Understanding Disk Organization

- Tracks
- Clusters
- Sectors

Role of Config.sys  
Understanding the Concepts of System Area on the disk  
Understanding the Concepts of User Area on the disk  
DOS file naming Conventions  
DOS Wildcards ( \* , ? )  
Importance of MS-DOS.SYS, IO.SYS, COMMAND.COM  
DOS Internal Commands  
DOS External Commands  
DOS Device Descriptors

- CON, PRN
- LPT1, LPT2, LPT3
- COM1, COM2, COM3, COM4

## Windows NT 4.0

**Week - 3**

**Introduction to Windows NT 4.0**

Understanding Windows NT

Differences between Windows NT Server and Windows NT Workstation

Features of Windows NT Server 4.0

Customizing Windows NT Server 4.0

Hardware and software requirements

Hardware requirements

Software requirements

Getting more information

Using Windows NT Help

Using troubleshooting wizards in Help

**Installing Windows NT Server 4.0**

Before you begin

Pre-installation checklist

Running Windows NT Server Setup

Upgrading to Windows NT Server 4.0

Selecting Setup options

FAT vs. NTFS

Choosing a licensing option

Network protocols

Logging on to Windows NT Server 4.0

**Windows NT Workstation 4.0 Basics**

Introducing Windows NT Workstation

Starting and shutting down Windows NT Workstation

Windows NT Security

Touring the Windows NT Desktop

Customizing your work environment

Changing how your desktop looks

Creating shortcuts to files and folders

Customizing the Start menu

Viewing the contents of your computer

Organizing files and folders

Starting, closing, and switching between programs

Starting programs automatically

Using the Task Manager to quit a program

Getting connected to the World Wide Web

Touring Internet Explorer 5.0

Exploring the World Wide Web

Understanding Control Panel

Printer Settings

Task Bars

Understanding Accessories in Windows NT 4.0 Workstation

**Week - 4**

**Windows NT Server 4.0 Basics**

Understanding networks

LAN vs. WAN

Making the connection

Components of a Windows NT network

Workgroups and domains

Servers: Primary Domain Controllers, Backup Domain Controllers, and member servers

User accounts

- Groups
  - Built-in accounts and groups
- Account policies, user profiles, and user rights
  - Account policies
  - User profiles
- User rights
- Understanding Control Panel
- Printer Settings
- Task Bars
- Understanding Accessories in Windows NT 4.0 Server

## Linux 7.0

### **Week - 5**

#### **Installing and Learning about Your System**

- Introduction
- Getting Started with Red Hat Linux 7.0
- Installing Red Hat Linux 7.0
- Linux Basics
- Exploring the Red Hat Linux Filesystem
- Using the Visual Editor
- Xfree86 - The Linux Window System

#### **Using Red Hat Linux 7.0**

- Using the GNOME Desktop Environment
- Setting Up a Printer and Other Devices
- Connecting to the Internet Part 1
- Using the Internet
- Linux Application
- Linux Productivity Application

### **Week - 6**

#### **Linux Foundations**

- The Linux 2.4 Kernel
- Working with Shells
- Administering the System
- Using linuxconf and Graphical Administration Tools
- Setting Up a Simple Network

#### **Advanced Topics**

- Integrating Linux and Windows
- What Every User Should Know About Security
- Automating Tasks with Shell Scripting
- Troubleshooting and Getting Help
- Compiling and Installing Applications from Source Code
- Introduction to Linux Programming

## MS-FrontPage 2000

**Week - 7**

**Creating a Site**

Using Wizards and Themes  
Setting Up Style Sheets  
Checking Links and Spelling

**Working with Frames**

Creating Frames Pages  
Splitting Frames  
Editing Frames Pages

**Altering Images**

Cropping and Resizing  
Working with Images and Text  
Creating a Transparency

**Week - 8**

**Adding DHTML and Other Media**

Adding DHTML Effects  
This is a Good Place for a Plug-In  
Adding Video  
ActiveX

**Managing a Site**

Security  
Adding and Removing Users  
Checking Files Out and In

**Other Timesavers and New Features**

Adding a Hit Counter  
Adding an Ad Banner  
Add a Search Form

**HTML & DHTML**

**Week 9**

Introducing Web Pages and HTML  
Creating Your First HTML Document  
Stepping Out : Linking Your Way around the Web  
Publishing Your HTML Document  
Understanding the HTML Document Life Cycle  
Site Design and Navigation  
Planning and Designing Your Web Page  
Formatting the Body Section of Your Pages  
Dividing a Window with Frames  
Lay Out Technology  
Adding Graphics  
Presenting Information in Tables  
Web Typography

## **Week 10**

### **Advanced HTML**

Optimizing Your Pages for Internet Explorer 5  
Optimizing Your Pages for Netscape Navigation 4  
Including Multimedia  
Using Style Sheets  
Developing HTML Forms  
Exploring and Navigation Dynamic HTML (DHTML)  
Sample Web Page Creation with all possible tags.

## **Macromedia FLASH 4.0**

## **Week 11**

### **Flash Basics**

An Overview Of Flash  
Introduction To Flash 4 Interface  
Basic Flash Movement

### **Creating With Flash**

Layers  
Flash Rotation And Scaling  
Flash Drawing Tools:  
Line  
Oval  
Rectangle  
Freeform  
Symbols  
Using Instances Of Symbols In Your Flash Movie  
Changing All Instances By Changing The Symbol In Flash  
Using A Button Symbol Instance In Your Flash Movie  
Adding Interactivity  
Using Motion Guides

## **Week 12**

### **Shape Tweening**

Flash Shape Tweening

### **Sounds**

Organizing Sounds In Your Flash Movie  
Importing A Sound (.Wav) File Into Your Flash Movie  
Adding A Sound Loop To Your Flash Movie  
Adding Overlapping Event Sounds To Your Flash Movie  
Stopping Sounds In Your Flash Movie

## **CGI / PERL**

## **Week - 13**

### **Introducing Perl and CGI**

Why Perl?  
Perl's Ancient History

Building a Perl Script  
Variables Scalars and Lists in Perl  
Perl and the Common Gateway Interface  
CGI Programming Languages

**Bringing Perl to the World Wide Web**

Setting up an HTTP Server  
Perl Meets the World Wide Web  
Hellowww.pl Explained  
Perl subroutines  
Using the *require* Command  
CGI and HTML  
MIME Defines the Rules  
Getting Acquainted with the Samba Server

**Connecting Perl to the World Wide Web**

Using the CGI Environment  
Displaying the CGI Environment  
Understanding MIME Types

**Using Perl and CGI in the Real World**

The Task: Counting your visitors  
How Perl Deals with Files  
Bringing, your Counter to the Web  
Running this Counter

**Week - 14**

**Creating Real-World HTML Forms with Perl and CGI**

Building an HTML Form  
URLs and CGI  
The Power of Regular Expressions

**Perl and the Complex Web page**

Quizzing Your Visitors  
Basic Polling

**Creating a Guest Book for Your Web Site**

Designing the Guest Book  
Adding Guest Book Entries  
Displaying the Guest Book  
What's in a Form: Security Issues

**Creating Dynamic Web Pages: More Tools**

Using Server-Side Includes  
Generating a Graphical on the Fly  
Making a Graphical Access Counter

**Week - 15**

**Monitoring Web Site Activity**

Using log files and Simple Reports  
Extracting log File Information  
Monitoring Activity from a Web page

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**The Language of the Web**

Introducing SGML the Basic of HTML  
Defining Document types  
Bringing HTML to the World Wide Web  
Extending HTML with Applets and Frames

**Platforms on the World Wide Web**

Choosing a Computer and Operating System  
Comparing the Big Tree  
Making Choices about Servers and Browsers

**Advanced Perl-CGI Tricks**

Searching a Database  
Taking the search to the web  
Writing a more complex search  
Programming for the internet

**Security on your Web Site**

Understanding the security Issues  
Protecting Web Pages with Passwords  
Maintaining a secure WEB site

## Oracle 8 DBA

### Database Architecture

**Week - 16****The ORACLE Architecture**

An Overview of Databases and Instances

## Databases

- Tablespaces
- Files

## Instances

## Internal Databases Structures

- Tables, Columns, and Datatypes
- Constraints
- Abstract Datatypes
- Partitions
- Users
- Schemas
- Indexes
- Clusters
- hash Clusters
- Views
- Sequences
- Procedures
- Functions
- Packages
- Triggers
- Synonyms
- Privileges and Roles
- Database Links
- Segments, Extents, and Blocks
- Rollback Segments

Internal Memory Structures

- System Global Area(SGA)
- Context Areas
- Program Global Area(PGA)

Background Processes

External Structures

- Redo Logs
- Control Files
- Trace Files and the Alert Log

Basic Database implementation

- Backup/Recovery Capabilities
- Security Capabilities
- Sample Logical Database Layout
- Sample physical Database Layout

Understanding Logical

Modeling Conventions

- One-To-One Relationships
- One-To-Many Relationships
- Many-To-Many Relationships

**Hardware Configurations and Considerations and Considerations**

Architecture Overview

Stand-Alone Hosts

- Stand-Alone Hosts With Disk Arrays
- Stand-Alone Hosts With Disk shadowing
- Stand-Alone Hosts With Multiple Databases

Networked Hosts

- Networks of Databases
- Remote Updates: The Advanced Replication Option
- Clustered Servers: The ORACLE Parallel Server

Multiple Processors: The Parallel Query and parallel Load

- Options

Client-Server Database Applications

**Week 17**

**Logical Database Layouts**

The End Product

The Optimal Flexible Architecture (OFA)

- The Starting Point:
- Separating Application

Beyond OFA

- Separating Low- Usage
- Separating Low - Usage
- Separating Tools Indexes: TOOLS\_1
- Separating Specialty
- Separating User-Specific Temporary Segments: TEMP\_USER
- Additional Application - Specific

Common -Sense Logical Layouts

**Physical Database Layouts**

Database File Layout

- I/O Contention Among Datafiles
- I/O bottlenecks Among All Database Files
- Concurrent i/o Among Background Processes

- 
- Defining the Recoverability and Performance Goals for the system
  - Defining the System hardware and Mirroring Architecture
  - Identifying Disks That Can Be Dedicated to the Database
  - Choosing the Right Layout
- Verification of I/O weighting Estimates
- The Sixth Iteration : Back to the Planning Stage
- File Location
- Database Space Usage Overview
- Implications of the Storage Clause
  - Table Segments
  - Index Segments
  - Rollback Segments
  - Temporary Segments
  - Free Space
- Resizing Datafiles in ORACLE 7.2 and Above
- Automating Datafile Extensions
- How to Move Database Files
- Moving Datafiles
  - Moving Online Redo Log Files
  - Moving Control Files
- How to Deal locate Space in ORACLE7.2 and ORACLE7.3
- Shrinking Datafiles
  - Shrinking Tables, Cluster, and Indexes
  - How to Rebuild Indexes
- Physically Fit

## Database Management

### Week 18

#### Managing the Development Process

##### The Three Critical

- Elements of success

##### Cultural Processes

##### Management Processes

- Defining the Environment
- Role Definitions
- Deliverables
- Sizing Database Objects
- Iterative Development

##### Technology

- CASE Tools
- Shared Directories
- Project Management Databases
- Discussion Databases

##### Managing package Development

- Generation Diagrams
- Space Requirements
- Tuning Goals
- Security Requirements
- Data Requirements
- Execution Plans
- Acceptance Test Procedures

##### The Managed Environment

## **Monitoring Multiple Databases**

### Common Problem Areas

- Running Out of Free Space in a Tablespace
- Insufficient Space for Temporary Segments
- Rollback Segments That Have Reached Their maximum Extension
- Fragmentation of Data Segments
- Fragmented Free Space
- Improperly Sized SGA areas

### Target Selection

### The End Product

### Creating the Command Center Database

- Getting the Data
- Generating Alert Reports
- The Space Summary Report
- Purging Data

### Monitoring memory Objects

- Necessary Modifications to UTLBSTAT and UTLESTAT
- Interpreting the Statistics Reports
- Extensions to the Statistics Reports

### The Well - Managed Database

## **Week 19**

## **Managing Rollback Segments**

### Rollback Segments Overview

- How the Database Uses Rollback Segments
- Activating Rollback Segments
- Specifying a Rollback Segment for a Transaction

### Space Usage Within

- Rollback Segments

### Monitoring Rollback

- Segment Usage
- Monitoring Dynamic Extensions
- Transactions Per Rollback Segment
- Data Volumes in Rollback Segments

### Choosing the Number and Size

- Transaction Entry Volume
- Number of Transactions
- Determining the optimal Size
- Creating the Rollback Segments
- Production Versus Data

## **Database Tuning**

### Tuning Application Design

- Effective Table Design
- Distribution of CPU Requirements
- Effective Application Design

### Tuning SQL

### Tuning Memory Usage

- Using the Cost-Based Optimizer

### Tuning Data Storage

- Defragmentation of Segments
- Defragmentation of Free Extents
- Identifying Chained Rows
- Increasing The ORACLE block size

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### Tuning Data Manipulation

- Bulk Inserts: Using the SQL\* Loader Direct path Option
- Bulk Deletes : The Truncate Command

### Tuning Physical Storage

- Tuning File Fragmentation
- Using Raw Devices

### Tuning Logical Storage

### Reducing Network Traffic

- Replication of Data
- Using Remote Procedure Calls

## Week 20

### Database Security and Auditing

#### Security Capabilities

- Account Security
- Object Privileges
- System - Level Roles and Privileges

#### Implementing Security

- The Starting Point Operating System Security
- Creating users
- Dropping Users
- System-Level Privileges
- User Profiles
- Password Management
- Preventing Password Reuse
- Setting Password Complexity
- Tying Database Accounts
- Password Protection
- Object-Level privileges
- Listing Privileges

#### Limiting Available Commands: product User Profiles

#### Password Security During Logins

#### Password encryption and Trickery

- How Passwords Are Stored
- Setting impossible Passwords
- Becoming Another User

#### Auditing

- Login Audits
- Action Audits
- Object Audits

#### Protecting the Audit Trail

#### Security in A Distributed Environment

### Optimal Backup and Recovery Procedures

#### Capabilities

#### Logical Backups

- Export
- Import

#### Physical Backups

- Offline Backups
- Online (Archive log)Backups

#### Implementations

- Export
- Import
- Offline Backups

- Online (ARCHIVELOG) Backups
  - Standby Databases
- Integration of Backup Procedures
- Logical and Physical Backups Integration
  - Database and Operating System Backups Integration
- Recovery Scenarios When Using These Procedures Instance Failure
- Media (Disk ) Failure
  - Recovering Accidentally Dropped or Altered Objects
  - Parallel Recovery
  - Recovery Manager

## Week 21

### **Managing Oracle Financials and Other Packages and Utilities**

#### General Guidelines for Managing Packages

- Customizing Database Structures
- Security and Data Access Control
- Transaction Management
- File Locations
- Monitoring
- Versioning considerations
- The DBA'S role

#### Specific Guidelines for Managing ORACLE financials

- Database Structures
- Database Access
- Concurrent managers
- The Demo Database
- Versioning
- File Locations
- init.ora parameters
- Most Active Tables and Indexes
- The Optimizer

#### Specific Guidelines for Managing Designer/2000

- Database Structures
- init.ora Parameters
- Most Active Tables and Indexes
- The Optimizer

#### Managing other Packages and Utilities

- Context
- Export
- SQL\* Loader
- Programmatic Interfaces
- Using PRODUCT\_USER\_PROFILE in SQL\* Plus

### **Managing Large Databases**

#### Setting Up the Environment

- Sizing Large Databases
- Sizing Support Areas
- Choosing a Physical Layout
- Partitions
- Creating Fully Indexed Tables
- Creating and Managing Index-Only Tables
- Creating and Managing Bitmap Indexes

#### Managing Transactions

- Configuring the Batch Transaction Environment
- Loading Data

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- Inserting Data
  - Deleting Data
- Backups
- Evaluating Backup needs and Strategies
  - Developing the Backup Plan
- Tuning
- Tuning Queries of Large Tables

## Networked ORACLE

### Week 22

#### SQL\* Net V2 and Net8

Overview of SQL\* Net V2 and Net 8

- Connect Descriptors
- Service names
- Listeners

Using The net 8 Assistant

- The Multi-Protocol Interchange
- Using Connection manager
- Using ORACLE names

Usage Example : client-Server Applications

Usage Example : Database Links

Usage Example : The Copy Command

Tuning SQL\* Net and net 8

#### Networking in UNIX

Identification of Hosts

Identification of Databases

Identification of Services

Starting the Listener Server Process

Controlling the Listener Server Process

Debugging connection Problem

### Week 23

#### Managing Distributed Databases

Overview of Distributed Databases

- remote Queries
- Remote Data manipulation : Two - Phase commit
- Dynamic Data Replication

Managing Distributed Data

- The Infrastructure : Enforcing Location transparency
- Managing Database Links
- Managing Database triggers
- Managing Snapshots
- Choosing the Refresh Type
- Offline Instantiation of Snapshots
- Purging the Snapshots Log

Managing Distributed Transactions

- Resolving In- Doubt Transactions

Database Domains and Communities

Monitoring Distributed Database  
Tuning Distributed Databases  
Using the Job Queues

- Managing Jobs

**Configuring Client-Server and Network Computing Environments**

Overview of Client - Server Processing

- The Network Computer

Configuring the Server

- Identifying Available Hosts
- Identifying Available Services
- Identifying Available Databases
- Starting SQL\* net

Configuring the Client

- Identifying Available Hosts
- Identifying Available Services
- Client Machine Specifications
- Running SQL\* Net

Toward a Network Computer Configuration

**JavaScript Breakup**

**Week - 24**

**Introduction to JAVASCRIPT**

Versions Of JavaScript  
Embedding JavaScript  
JavaScript Grammar  
Variables And Data Types

**Operators**

Arithmetic or Computational  
Comparison  
Boolean  
String and Assignment  
Special  
Statements  
Conditionals  
Loops  
Object Manipulation  
Comments

**Week - 25**

**Functions**

Defining Functions

Calling Functions

**Objects**

Document Object Model

Properties

Methods

Creating Objects

**Event Handlers**

**VBScript Breakup**

**Week - 26**

**Introduction to VBScript**

What is VBScript?

Adding VBScript to Web Pages

The <SCRIPT> Tag

Non-Supporting Browsers

Working with Variables

Declaring Variables

Scope of Variables

Constants

Arrays

**Week - 27**

More on VBScript

Objects and VBScript

Adding Objects to Web Pages

Linking VBScript with Objects

Controlling VBScript Routines

Conditional Statements

Looping Statements

Using VBScript with Forms

Validating Your Forms

**Advance Java 2.0**

**Week - 28**

**An Introduction to Java**

Java as a Programming Tool

Advantages of Java

The Java "White Paper" Buzzwords:

Simple

Object-Oriented

Distributed

Robust

Secure

Architecture Neutral

Portable

Interpreted and High Performance

Multithreaded

Dynamic

Java and the Internet

Applets at Work

Server-side Java

A Short History of Java

Common Misconceptions About Java

### **The Java Programming Environment**

Installing the Java Software Development Kit

Setting the Execution Path

Installing the Library Source and Documentation

Installing the Core Java Program Examples

Navigating the Java Directories

Development Environments

Using the Command Line Tools

Troubleshooting Hints

Using an Integrated Development Environment

Locating Compilation Errors

Compiling and Running Programs from a Text Editor

Graphical Applications

Applets

### **Fundamental Programming Structures in Java**

A Simple Java Program

Comments

Data Types

Integers

Floating-Point Types

The Character Type

The Boolean Type

Variables

Assignments and Initializations

Constants

Operators

Increment and Decrement Operators

Relational and Boolean Operators

Bitwise Operators

Mathematical Functions and Constants

Conversions Between Numeric Types

Casts

Parentheses and Operator Hierarchy

Strings

Concatenation

Substrings

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String Editing  
Testing Strings for Equality  
Reading the On-line API Documentation  
Reading Input  
Formatting Output  
Control Flow  
Block Scope  
Conditional Statements  
Indeterminate Loops  
Determinate Loops  
Multiple Selections-the switch Statement  
Breaking Control Flow  
Big Numbers  
Arrays  
Array Initializers and Anonymous Arrays  
Copying Arrays  
Command Line Parameters  
Sorting an Array  
Multidimensional Arrays  
Ragged Arrays

## **Week - 29**

### **Objects and Classes**

Introduction to Object-Oriented Programming  
The Vocabulary of OOP  
Objects  
Relationships Between Classes  
Contrasting OOP with Traditional Procedural Programming Techniques  
Using Existing Classes  
Objects and Object Variables  
The Gregorian Calendar Class of the Java Library  
Building Your Own Classes  
An Employee Class  
Using Multiple Source Files  
Analyzing the Employee Class  
First Steps with Constructors  
The Methods of the Employee Class  
Method Access to Private Data  
Private Methods  
Final Instance Fields  
Static Fields and Methods  
Static Fields  
Constants. Static Methods  
Factory Methods  
The main Method  
Method Parameters  
Object Construction  
Overloading  
Default Field Initialization  
Default Constructors  
Explicit Field Initialization  
Parameter Names  
Calling Another Constructor  
Initialization Blocks  
Object Destruction and the finalize Method  
Packages

Using Packages  
Documentation Comments  
How to Insert Comments  
Class Comments  
Method Comments  
Field Comments  
General Comments  
Package and Overview Comments  
How to Extract Comments  
Class Design Hints

### **Inheritance**

Extending Classes  
Inheritance Hierarchies  
Polymorphism  
Dynamic Binding  
Preventing Inheritance: Final Classes and Methods  
Casting  
Abstract Classes  
Protected Access  
Object: The Cosmic Superclass  
The equals and toString methods  
Generic Programming  
Array Lists  
Object Wrappers  
The Class Class  
Reflection  
Using Reflection to Analyze the Capabilities of Classes  
Using Reflection to Analyze Objects at Run Time  
Using Reflection to Write Generic Array Code  
Method Pointers! Design Hints for Inheritance

### **Week - 30**

#### **Interfaces and Inner Classes**

Interfaces  
Properties of Interfaces  
Interfaces and Abstract Classes  
Interfaces and Callbacks  
Object Cloning  
Inner Classes  
Using an Inner Class to Access Object State  
Special Syntax Rules for Inner Classes  
Are Inner Classes Useful?  
Are They Actually Necessary?  
Are They Secure?  
Local Inner Classes  
Static Inner Classes  
Proxies  
Properties of Proxy Classes

#### **Graphics Programming**

Introduction to Swing  
Creating a Frame  
Frame Positioning  
Displaying Information in a Panel

2D Shapes  
Colors  
Filling Shapes  
Text and Fonts  
Images

### **Event Handling**

Basics of Event Handling  
Example: Handling a button click  
Selecting Event Listeners  
Example: Changing the Look and Feel  
    Example: Capturing Window Events  
    The AWT Event Hierarchy  
    Semantic and Low-Level Events in the AWT  
Event Handling Summary  
Low-Level Events  
Focus Events  
Keyboard Events  
Consuming Events  
Mouse Events  
Actions  
Multicasting  
The Event Queue  
Adding Custom Events

### **Week - 31**

#### **User Interface Components With Swing**

The Model-View-Controller Design Pattern  
A Model-View-Controller Analysis of Swing Buttons  
An Introduction to Layout Management  
Border Layout  
Panels  
Text Input  
Text Fields  
Input Validation  
Password Fields  
Text Areas  
Labels and Labeling Components  
Selecting Text  
Editing Text  
Making Choices  
Check Boxes  
Radio Buttons  
Borders  
Combo Boxes  
Sliders  
Menus  
Building Menus  
Icons in Menu Items  
Check Box and Radio Button Menu Items  
Pop-up Menus  
Keyboard Mnemonics and Accelerators  
Enabling and Disabling Menu Items  
Tool Bars  
Tool Tips

Sophisticated Layout Management

Grid Layout

Box Layout

Grid Bag Layout;

The gridx, gridy, gridwidth, and gridheight Parameters

Weight Fields

The fill and anchor Parameters

Padding

An Alternative Method to Specify the gridx, gridy, gridwidth, and gridheight Parameters

Using No Layout Manager

Custom Layout Managers

Traversal Order

Dialog Boxes

Option Dialogs

Creating Dialogs

Data Exchange

File Dialogs

Color Choosers

### **Applets**

Applet Basics

A Simple Applet

Running the Applet Viewer

Viewing an Applet in a Browser

Converting Applications to Applets

Life Cycle of an Applet

Security Basics

Pop-Up Windows in Applets

The Applet HTML Tags and Attributes

Applet Attributes for Positioning

Applet Attributes for Code

Applet Attributes for Java-Challenged Viewers

The OBJECT Tag

Java Plug-In Tags

Passing Information to Applets

Multimedia

URLs

Obtaining Multimedia Files

The Applet Context

Inter-Applet Communication

Displaying Items in the Browser

A Bookmark Applet

It's an Applet

It's an Application

It's Both! JAR Files

The Manifest

Jar Caching

Self-Running JAR files

Resources

Optional Packages

Sealing

**Week - 32**

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**Exceptions and Debugging**

Dealing with Errors  
The Classification of Exceptions  
Advertising the Exceptions That a Method Throws  
How to Throw an Exception  
Creating Exception Classes  
Catching Exceptions  
Catching Multiple Exceptions  
Re-throwing Exceptions  
A Final Look at Java Error- and Exception-Handling  
Some Tips on Using Exceptions  
Debugging Techniques  
Useful Tricks for Debugging  
Assertions  
Using a Console Window  
Tracing AWT Events  
The AWT Robot  
Profiling  
Coverage Testing  
Using a Debugger  
The JDB Debugger  
The Forte Debugger

**Streams and Files**

Streams  
Reading and Writing Bytes  
The Complete Stream Zoo  
Layering Stream Filters  
Data Streams  
Random-Access File Streams  
ZIP File Streams  
Putting Streams to Use  
Writing Delimited Output  
String Tokenizes and Delimited Text  
Reading Delimited Input  
Random-Access Streams  
Object Streams  
Storing Objects of Variable Type  
Object Serialization File Format  
The Problem of Saving Object References  
Output Format for Object References  
Security  
Versioning  
Using Serialization for Cloning  
File Management

**Week - 33****Java Swing**

Introduction to Swing  
Swing Packages  
Swing Component Hierarchy  
Japplet  
Icons and Lables  
Text Fields  
Buttons

- CheckBoxes
- RadioButtons
- Combo Boxes
- Menus
- TREES
- Simple Trees
- Tables
- Progress Table Models
- Progress Bar and Progress Monitor
  - Jprogress Bar
  - Jprogress Monitor
- Component Organizer
  - Tabbed Pane
  - Scroll Panes
  - Split Panes
- Look and Feel

### **Remote Method Invocation**

- An overview of RMI Application
  - Requirements of Distributed Object
  - Remote Interfaces, Objects, and Methods
  - Creating distributed applications using RMI
- Authoring An RMI Server
  - Designing a Remote Interface
  - Implementing a Remote Interface
- Creation of A Client Program
- Compiling the server and the client
  - Compiling the server and the client Programs
- Running the Server and the Client Programs
  - Start the Server

### **Week - 34**

#### **Servlets**

- Background
- The Life Cycle of a Servlet
- The Java Servlet Development Kit
- A Simple Servlet
  - Create and Compile the Servlet Source Code
  - Start the Servletrunner Utility
  - Start a Web Browser and Request the Servlet
- The Servlet API
- The javax.servlet Package
  - The Servlet Interface
  - The ServletConfig Interface
  - The ServletContext Interface
  - The ServletResponse Interface
  - The Single ThreadModel Interface
  - The GenericServlet Class
  - The ServletInputStream Class
  - The ServletOutputStream Class
  - The ServletException Class
  - The Unavailable Exception Class

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- Reading Servlet Parameters
- Reading Initialization Parameters
- The javax.servlet.http Package
  - The HttpServletRequest Interface
  - The HttpServletResponse Interface
  - The HttpSession Interface
  - The HttpSessionBinding Listener Interface
  - The HttpSessionContext Interface
  - The Cookie Class
  - The HttpServlet Class
  - The HttpSession Binding Event Class
  - The HttpUtils Class
- Handling HTTP Request and Response
  - Handling HTTP GET Requests
  - Handling HTTP POST Requests
- Using Cookies
- Session Tracking
- Security Issues
- Exploring Servlets

## **Week - 35**

### **Network Programming**

- Networking Basics
- Java and the Net
- InetAddress
- TCP/IP Server Sockets
- A Caching Proxy HTTP Server
- Datagrams
- Net Worth

### **Java Database Connectivity**

- JDBC Introduction
- JDBC API
- JDBC versus ODBC and other APIs
- Two-tier and Three-tier Models
- JDBC Drivers
- JDBC Products
  - JDBC Driver Manager
  - JDBC Driver Test Suite
  - JDBC-ODBC Bridge
- JDBC Driver Types
- Basic Steps to JDBC
- Establishing a Connection
  - Loading Drivers
- Setting Up Tables
  - Creating a Tables
  - Creating JDBC Statements
  - Executing Statements
  - Entering Data into a Table
  - Getting Data from a Table
- Retrieving Values from Result Sets
  - Using the Method Sets
  - Using the getXXX Methods

Updating Tables  
Time and Data Literals  
Outer Joins  
ResultSetMetaData Interface  
Important Methods of Driver Manager Class  
Database Security

## **JSP (Java Server Pages)**

**Week - 36**

### **JSP Overview : The Components of a JavaServer Page**

Directives  
Actions  
Implicit Objects  
JSP Scripting

### **Java Servlets**

Practical Applications for Java Servlets  
The Java Servlets Architecture  
The Life Cycle of a Servlet  
A Basic Servlet  
Dissecting the BasicServlet

### **JavaBeans and JSP Concepts**

Adding JavaBeans to JavaServer Pages

### **JDBC and JSP Concepts**

Two-and-Three-Tier Database Access Models  
JDBC Driver Types  
JDBC Basics  
Using the JDBC in JavaServer Pages

### **Configuring the JSP Server**

Installing the Tomcat Server  
Creating the PUREJSP Web Application

### **Handling JSP Errors**

JSP Translation Time Errors  
JSP Request Time Errors

### **Using the Include Directive**

The include Directive  
Example: A Standard Title Bar

### **JavaServer Pages and Inheritance**

The Superclass  
The JSP Subclass

### **Using the JSP's Implicit Objects**

request  
response  
pageContext  
session  
application

out  
config  
page  
exception

### **Using JSP Standard Actions**

<jsp:param>  
<jsp:include>  
<jsp:forward>  
<jsp:plugin>

### **JSPs and JavaBean Scope**

page  
request  
session  
application

### **JSP and HTML Forms**

What is an HTML Form?  
Using a JSP to Create an HTML Form  
Retrieving Form Data with a JSP

### **JSP and a Shopping Cart**

Creating a Shopping Cart  
Integrating the Shopping Cart  
Creating a Shopping Cart

### **JSP and a JDBC Connection Pool Bean**

Using a JDBC Connection Pool

### **JSP and XML**

XML and Java  
Using XML in a JSP

### **JSP Communication with Servlets**

A Servlets-Only Application Model  
A JSP-Only Solution  
A Server-Side Implementation of the MVC  
A Server-Side Example Using the MVC

### **JSP and JavaMail**

Configuring JavaMail  
A JavaMail Example  
Using JavaMail in a JSP

## **ASP (Active Server Pages)**

**Week - 37**

### **Getting Started with ASP**

What are active Server Pages  
Running ASP Pages  
Creating ASP Pages  
Creating your First ASP Pages

### **Dissecting your First ASP Script**

Understanding ASP Scripts  
What your ASP Script Returned to the Browser  
The ASP Process

### **Working with Variables**

What is a Variables?  
Data Types  
Integer  
Floating-point Numbers  
VBScript Operators

### **Working with Objects**

What are Objects?  
The Building Blocks of Objects  
Built-in ASP Objects  
Collections  
Working with Objects  
Events

### **Using the Response Object**

What Is the Response Object?  
Dissecting the Response Object

### **Working with the Request Object**

Accessing the HTTP Headers  
Accessing the Environment Variables  
Using Cookies

### **Debugging your ASP Scripts and Handling Errors**

Debugging your ASP Scripts  
Handling ASP Errors Gracefully

### **Using Databases**

What are relational Databases?  
Why use Database?  
Working with Database using ASP

### **Reading from a Database Using ASP**

Database and ASP  
Connecting to a Database  
Reading Data from a Database

### **Inserting, Updating, and Deleting Database Records**

Inserting Records  
Updating Records  
Deleting Records

### **Examining the Recordset Object**

Enhancing Information Retrieval  
Understanding the CursorType and CursorLocation Properties  
Sorting Recordsets  
Filtering Recordsets

### **Using SQL Statements to Query Data**

What is SQL?

The SELECT SQL Statement  
Allowing Users to Query Data

**Using Advanced Database Techniques**

Advanced Features of the Recordset Object  
Using Stored Procedures  
The Command Object

**Practicing Intelligent Application Design**

Why Design Matters  
Good Database Design Techniques  
Good ASP Design Techniques

**E-Commerce**

**Week - 38**

**Understanding Electronic Commerce**

What is E-Commerce

**Overview of E-Commerce**

Visiting the Sites  
Introduction to Commerce Server

**Building a Site**

Creating a Site Foundation  
Creating a Site  
Working with the Server Administration Pages

**Enhancing the Product Catalog**

Introducing Commerce Server objects  
Modifying Wizard-Generated Catalog Pages  
Adding Product Search Capability  
Implementing Cross-Sell

**Managing a Shopping Cart**

Managing a Shopping Session  
Adding Items to a Shopping Cart  
Displaying, Updating, and Removing Items  
Implementing Price Promotions  
Implementing Upsell

**Week - 39**

**Processing Orders**

Understanding Order Processing

Running the Order Processing Pipeline (OPP)  
Understanding the Plan Pipeline

**Checking Out**

Capturing Shopper Information  
Computing Order Value  
Adding a Scriptor Component

**Completing the Purchase Process**

Understanding Purchase  
Executing the Purchase OPP  
Tracking an Order  
Securing Business Transactions

**Tracking Shopper Information**

Using Cookies to Track Shoppers  
Using Registration Table to Track Shoppers

**Introducing Business-to-Business Commerce**

Business-to-Business Commerce  
Business Partner Functionality

**Web Logic**

**Week - 40**

**Introduction**

What is WebLogic Server?  
Multi-tier Application Architecture  
WebLogic Server Architecture  
WebLogic Server and Sun Java 2 Platform  
WebLogic Server Application Models  
Java Development with WebLogic Server

**WebLogic Server Administration**

WebLogic Server Administrative Facilities  
The WebLogic Console  
WebLogic Server security  
WebLogic Server Clusters

**WebLogic Server Developer API's**

Developing Applications for WebLogic Server

**UML (Unified Modeling Language)**

**Week - 41**

**Getting Started**

Introduction to UML  
Understanding Object-Orientation  
Working with Object-Orientation  
Working with Relationships

Understanding Aggregations, Composites, Interfaces & Realizations  
Introducing Use Cases  
Working with Use Case Diagrams  
Working with State Diagrams  
Working with Sequence Diagrams  
Working with Collaboration Diagrams  
Working with Activity Diagrams  
Working with Components Diagrams  
Working with Deployment Diagrams  
Extending Understanding the Foundations of the UML  
Fitting the UML into a Development process

## **Week - 42**

### **A Case Study**

Introducing the Case Study  
Performing a Domain Analysis  
Gathering System Requirements  
Developing the Use Cases  
Getting into Interactions and State Changes  
Designing Look, Feel, and Deployment  
Understanding Design Patterns  
Modeling Embedded Systems  
Shaping the Future of the UML

## **XML (eXtensible Markup Language)**

## **Week - 43**

### **Introduction to XML**

What is XML?  
How does it differ from HTML?

### **How XML can be used**

Different ways of using XML

### **XML Syntax**

The simple and very strict syntax rules of XML

### **XML Elements**

XML Elements, Relationships, Content and Naming Rules

### **XML Attributes**

How XML attributes can be used to describe elements  
Use of XML attributes to provide additional information about elements

### **XML Validation**

The difference between a Well Formed and a Valid XML document  
How a DTD is used to define the XML document.

## **Week - 44**

### **XML support in Netscape and Explorer**

The support for XML in the two most famous browsers

**Viewing XML in Internet Explorer**

How to use Internet Explorer to view an XML file

**Displaying XML with CSS**

How to use Internet Explorer and CSS to display an XML file

**Displaying XML with XSL**

How to use Internet Explorer and XSL to display an XML file

**XML embedded in HTML**

Embedding XML inside HTML documents

**The Microsoft XML Parser**

Use of the Microsoft XML parser to open and manipulate XML documents

**XML in Real Life**

Take a look at some real life use of XML

Week - 45 to 48

Cutting Edge Technology

Week - 49 to 52

Project (Simulated)

